

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

 ATTORNEY'S DOCKET NUMBER
10848-016001

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 U.S. APPLICATION NO. (If Known, see 37 CFR
1.5)
10/018,449

 INTERNATIONAL APPLICATION NO.
PCT/DE00/01945

 INTERNATIONAL FILING DATE
10 June 2000

 PRIORITY DATE CLAIMED
14 June 1999

 TITLE OF INVENTION
METHOD AND DEVICE FOR IDENTIFYING A POLYMER

 APPLICANT(S) FOR DO/EO/US
Wolf Bertling and Jorg Hassmann

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☐ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
 2. ☒ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
 3. ☐ This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).
 4. ☐ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
 5. ☐ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
 6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
 8. ☐ An English language translation of amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
 9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
 10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).
- Items 11 to 16 below concern other documents or information included:**
11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
 12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
 13. ☐ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
 14. ☐ A substitute specification.
 15. ☐ A change of power of attorney and/or address letter.
 16. ☒ Other items or information:
 - ☒ English translation of the International Preliminary Examination Report for PCT/DE00/01945
 - ☒ Postcard
 - ☐
 - ☐

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CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

May 3, 2002

Date of Deposit

Signature

Jill Huso

Typed Name of

17. ☐ The following fees are submitted:**Basic National Fee (37 CFR 1.492(a)(1)-(5)):**

Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO **\$1040**

International preliminary examination fee (37 CFR 1.482) not paid to
USPTO but International Search Report prepared by the EPO or JPO **\$890**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but
international search fee (37 CFR 1.445(a)(2)) paid to USPTO **\$740**

International preliminary examination fee paid to USPTO (37 CFR 1.482)
but all claims did not satisfy provisions of PCT Article 33(1)-(4) **\$710**

International preliminary examination fee paid to USPTO (37 CFR 1.482)
and all claims satisfied provisions of PCT Article 33(1)-(4) **\$100**

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$0.00

Surcharge of **\$130** for furnishing the oath or declaration later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$0.00

Claims	Number Filed	Number Extra	Rate		
Total Claims	- 20 =		x \$18	\$0.00	
Independent Claims	- 3 =		x \$84	\$0.00	
MULTIPLE DEPENDENT CLAIMS(S) (if applicable)			+ \$280	\$0.00	
TOTAL OF ABOVE CALCULATIONS =				\$0.00	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$0.00	
SUBTOTAL =				\$0.00	
Processing fee of \$130 for furnishing the English Translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f))				\$0.00	
TOTAL NATIONAL FEE =				\$0.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) \$40.00 per property +				\$0.00	
TOTAL FEES ENCLOSED =				\$0.00	
				Amount to be refunded:	\$
				Charged:	\$

- a. ☐ A check in the amount of \$0.00 to cover the above fees is enclosed.
b. ☐ Please charge my Deposit Account No. 06-1050 in the amount of \$0.00 to cover the above fees. A duplicate copy of this sheet is enclosed.
c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-1050. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

M. Angela Parsons, Ph.D.
FISH & RICHARDSON P.C., P.A.
60 South Sixth Street
Suite 3300
Minneapolis, MN 55402
(612) 335-5070 phone
(612) 288-9696 facsimile

SIGNATURE:

NAME

M. Angela Parsons, Ph.D.

REGISTRATION NUMBER

44,282

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 401088GA	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE00/01945	International filing date (day/month/year) 10 June 2000 (10.06.00)	Priority date (day/month/year) 14 June 1999 (14.06.99)
International Patent Classification (IPC) or national classification and IPC G01N 21/75		
Applicant NOVEMBER AKTIENGESELLSCHAFT GESELLSCHAFT FUER MOLEKULARE MEDIZIN		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 07 December 2000 (07.12.00)	Date of completion of this report 30 July 2001 (30.07.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE00/01945

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 1-11, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages 1-28, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the drawings:
pages 1/2-2/2, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/DE 00/01945**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-28	YES
	Claims		NO
Inventive step (IS)	Claims	1-28	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-28	YES
	Claims		NO

2. Citations and explanations

1. This report mentions the following documents cited in the search report (D):

D1: US-A-4 687 732

D2: WO-A-98/48275

D3: EP-A-0 762 122

2. D1 (see column 4, line 5 - column 9, line 10; column 21, line 52 - column 22, line 45) describes a method which comprises some of the steps according to Claim 1.

The method according to Claim 1 differs by the following features:

- a) the second polymer is bonded to a second phase by means of a metallic cluster;
- b) a phase that is permeable to electromagnetic waves is used as the solid phase; and
- c) the second phase that is permeable to electromagnetic waves is irradiated in such a way as to detect a change in the properties of the reflected electromagnetic waves.

The use of metallic clusters in such layers is known to a person skilled in the art from the relevant

prior art (see, e.g., D2, pages 1-6), as are reflecting and light-transmitting layers (see D2, page 1, last paragraph and D3, page 3 and Fig. 1). However, D1, like D2 and D3, does not suggest to a person skilled in the art bonding the detection molecule or the second polymer to a solid phase that is permeable to electromagnetic waves and bonding the target to a first phase that reflects electromagnetic waves and bringing the two solid phases into contact in such a way that a reaction or hybridisation of the two polymers is monitored by means of a change in the reflection properties.

The subject matter of Claim 1 therefore involves an inventive step and meets the requirement of PCT Article 33(3).

3. For corresponding reasons the clarified (see Box VIII) subject matter of device Claim 15 also involves an inventive step.

The same applies to dependent Claims 2-14 and 16-28.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE 00/01945

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

4. Should the application be continued in the regional phase the following points have to be taken into account:
 - 4.1 Pursuant to PCT Rule 5.1(a)(ii), the description should cite D1-D3 and briefly outline the relevant prior art disclosed therein.
 - 4.2 The description should be adapted to any claims to be submitted.
 - 4.3 Device Claim 1 ought to contain the following features which are essential to the invention:
Means for bringing the two polymers into contact,
for radiating the second phase and for detecting and analysing the reflected electromagnetic waves.
 - 4.4 Pursuant to PCT Rule 6.3(b), the independent claims should be drafted in the two-part form; the features known in combination from the prior art (see, e.g., D1) should be set out in a preamble.